Haoran Zhang

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Education

University of Pittsburgh — **Pittsburgh, PA**
Ph.D. in Computer Science — *2015–Present*
- Advised by Prof. Diane Litman
- Research Interest: Natural Language Processing and Machine Learning
- Graduate Fellowship (Fall 2016)

The Chinese University of Hong Kong — **Hong Kong**
M.Sc. in Computer Science — *2012–2013*
- Distinguished Academic Performance Scholarship

Hong Kong Baptist University — **Zhuhai, China**
B.Sc. in Computer Science and Technology — *2008–2012*
- United International College
- Second class Scholarship (2012)
- Second Class Division One Horner
- Top 3 student in the department

Research

Automated Essay Scoring System (on-going): *Sep 2016–Present | Pittsburgh, PA*
- Working with **Prof. Diane Litman**
- An automated essay scoring system for upper elementary students.
- Using NLP and Machine Learning techniques to predict essay scores on a noisy corpus from young students.
- Focus on usage of examples and organization of essays.
- Combined word embedding model with the existing model to improve performance.
- Investigating an approach for formative feedback generation.
- Using a neural network approach for score predictions.
- Working on automated vital phases extraction.

Publications

- **H. Zhang**, A. Magooda, D. Litman, R. Correnti, E. Wang, L.C. Matsmura, E. Howe, & R. Quintana (2019). eRevise: Using Natural Language Processing to Provide Formative Feedback on Text Evidence Usage in Student Writing. *Proceedings Thirty-First Annual Conference on Innovative Applications of Artificial Intelligence (IAAI-19)*.
- Elaine Wang, Richard Correnti, Lindsay Clare Matsumura, Diane Litman, Emily Howe, Rafael Quintana, **Colin Zhang**, & Ahmed Ezzat Magooda (2019). eRevise: Automated Formative Feedback System to Improve Students' Use of Text Evidence in Writing. *American Educational Research Association Annual Meeting (AERA)*.
- **Haoran Zhang**, & Diane Litman (2018). Co-Attention Based Neural Network for Source-Dependent Essay Scoring. *Proceedings of the Thirteenth Workshop on Innovative Use of NLP for Building Educational Applications*, pp. 399-409.
- **Haoran Zhang**, & Diane Litman (2017). Word embedding for response-to-text assessment of evidence. *Proceedings of the 55th Annual Association for Computational Linguistics (Student Research Workshop)*, pp. 75-81.
- Shi-Kuo Chang, Wei Guo, Ducan Yung, Zinan Zhang, **Haoran Zhang**, & Wenbin You (2017). A mobile TDR system for smart phones. *23rd International DMS Conference on Visual Languages and Sentient Systems (DMSVLSS'17)*, pp. 75-85.
- Yingjie Tang, **Haoran Zhang**, Zhijian Liang, & Shi-Kuo Chang (2016). Social network models for the TDR system. *Proceedings of The 22nd International Conference on Distributed Multimedia Systems (DMS2016)*, pp. 119-128.

Course Projects

- **Machine Comprehension:**
  - A neural network project based on Bi-Directional Attention Flow for machine comprehension.
  - Used Tensorflow, PyTorch, and Dynet to implement different neural network models.
- **Automatic Car Plate Recognition System:**
  - Detect and extract car plates information automatically.
  - Used EmguCV framework, and C#.

Working Experiences

University of Pittsburgh — **Pittsburgh, PA**
Graduate Research Assistant — *Aug 2017–Present*
  - Working on an Automated Essay Scoring Project.
  - Using attention-based neural model for essay score prediction.
  - Select formative feedback automatically which helps students to revise their drafts.

Facebook — **Menlo Park, CA**
Software Engineering Intern — *May 2019–Aug 2019*
  - Work on in-feed video recommendation model.
  - Pushed online metrics by introducing additional information to the current video representation.

Google X — **Mountain View, CA**
Machine Learning Residence (Intern) — *May 2018–Aug 2018*
  - This project is confidential.
  - Created a file extraction system.
  - Developed an automated camera exposure control system using neural network model.

Tianjin Sante Electronics Co.,Ltd. — **Tianjin, China**
Software Engineering Intern — *June 2016–Aug 2016*
  - Created a leaking melting steel detection project.
  - Use Open CV and C++.
  - Detect sparkling of melting steel in real time video frames and produce sound and visual alert.
  - Future works based on my work have been deployed on steel factories.

University of Pittsburgh — **Pittsburgh, PA**
Teaching Assistant — *Aug 2015–Aug 2017*
  - Part-time teaching assistant of "Data Structure" and "Computer Organization and Assembly Language" courses.

United International College — **Zhuhai, China**
Teaching Assistant — *Aug 2013–June 2015*
  - Worked in Computer Science and Technology department.
  - Full-time teaching assistant for 6 courses each semester.

Yuanguang Software Co.,Ltd. — **Zhuhai, China**
Software Engineering Intern — *Feb 2012–May 2012*
  - Worked on an Enterprise Resource Planning projects.
  - Worked in Information Integrated Department.
  - Use Java, Struts2, and HTML
  - All code had been deployed on factories of China Southern Power Grid.

Skills

- **Languages:** Proficient in: Java, Python, C++. Also experienced with: Matlab, C#, C, HTML, PHP, JSP.
- **Frameworks:** Weka, NLTK, scikit-learn, Keras, PyTorch, TensorFlow, OpenCV, Struts, Hibernate, Hadoop, ROS.

Awards

- Graduate Fellowship (Fall 2016)

- Distinguished Academic Performance Scholarship (2012 - 2013)

- 2nd Class Scholarship (2011 - 2012)